Fig. 1A

AKAP18δ

Amino acid sequence

MERPAAGEIDANKCDHLSRGEEGTGDLETSPV
GSLADLPFAAVDIQDDCGLPDVPQGNVPQGNPKRSKENRGDRNDHVKKRK
KAKKDYQPNYFLSIPITNKKITAGIKVLQNSILRQDNRLTKAMVGDGSFH
ITLLVMQLLNEDEVNIGTDALLELKPFVEEILEGKHLTLPFHGIGTFQGQ
VGFVKLADGDHVSALLEIAETAKRTFQEKGILAGESRTFKPHLTFMKLSK
APMLWKKGVRKIEPGLYEQFIDHRFGEEILYQIDLCSMLKKKQSNGYYHC
ESSIVIGEKDRKEPEDAELVRLSKRLVENAVLKAVQQYLEETQNKKQPGE
GNSVKAEEGDRNGDGSDNNRK

Nucleotide sequence (SEQ No. 1)

ATGGAGCGCCCCGCCGCGGGAGAAATAGATGCCAATAAGTGTGA
TCATTTATCAAGAGGAGAGGAAGGGACGGGGGACCTGGAGACCAGCCCTG
TAGGTTCTCTGGCAGACCTGCCGTTTGCTGCCGTAGACATTCAAGATGAC
TGTGGACTCCCTGATGTACCTCAAGGAAATGTACCTCAAGGAAACCCAAA
GAGAAGCAAAGAAAATAGAGGCGACAGGAATGATCACGTGAAGAAGAGGA
AGAAGGCCAAGAAAGATTATCAACCCAACTATTTCCTGTCCATTCCAATC
ACCAACAAAAAGATTACAGCTGGAATTAAAGTCTTGCAAAATTCGATACT
GAGACAGGATAATCGATTGACCAAAGCCATGGTCGGCGACGGCTCCTTTC
ACATCACCTTGCTAGTGATGCAGCTATTAAACGAAGATGAAGTAAACATA
GGTACCGACGCGCTTTTGGAACTGAAGCCGTTCGTTGAGGAGATCCTTGA
GGGGAAGCATCTGACTTTGCCCTTCCACGGGATTGGCACTTTCCAAGGTC
AGGTTGGCTTTGTGAAGCTGGCAGACGGAGATCACGTCAGTGCCCTCCTG
GAGATAGCAGAGACTGCAAAAAGGACATTTCAGGAAAAAGGCATCCTGGC
TGGAGAAAGCAGAACTTTTAAGCCTCACCTGACCTTTATGAAGCTGTCCA
AAGCACCAATGCTCTGGAAGAAGGGAGTGAGAAAAATAGAGCCTGGATTG
TATGAGCAATTTATCGACCACAGATTTGGAGAAGAAATACTGTACCAAAT
AGATCTCTGCTCCATGCTGAAGAAAAAACAGAGCAATGGTTATTACCACT
GCGAGTCTTCGATCGTGATCGGTGAGAAGGACCGAAAGGAGCCTGAGGAT
GCTGAACTGGTCAGGCTCAGTAAGAGGCTGGTGGAGAACGCCGTGCTCAA
GGCTGTCCAGCAGTACCTAGAAGAGACACAGAACAAAAAGCAGCCGGGGG
AGGGGAACTCCGTCAAAGCTGAGGAGGGAGATCGGAATGGCGATGGCAGT
GATAACAACCGGAAGTGA

Fig. 2: Interaction of AKAP18δ-CFP and RIIα-YFP

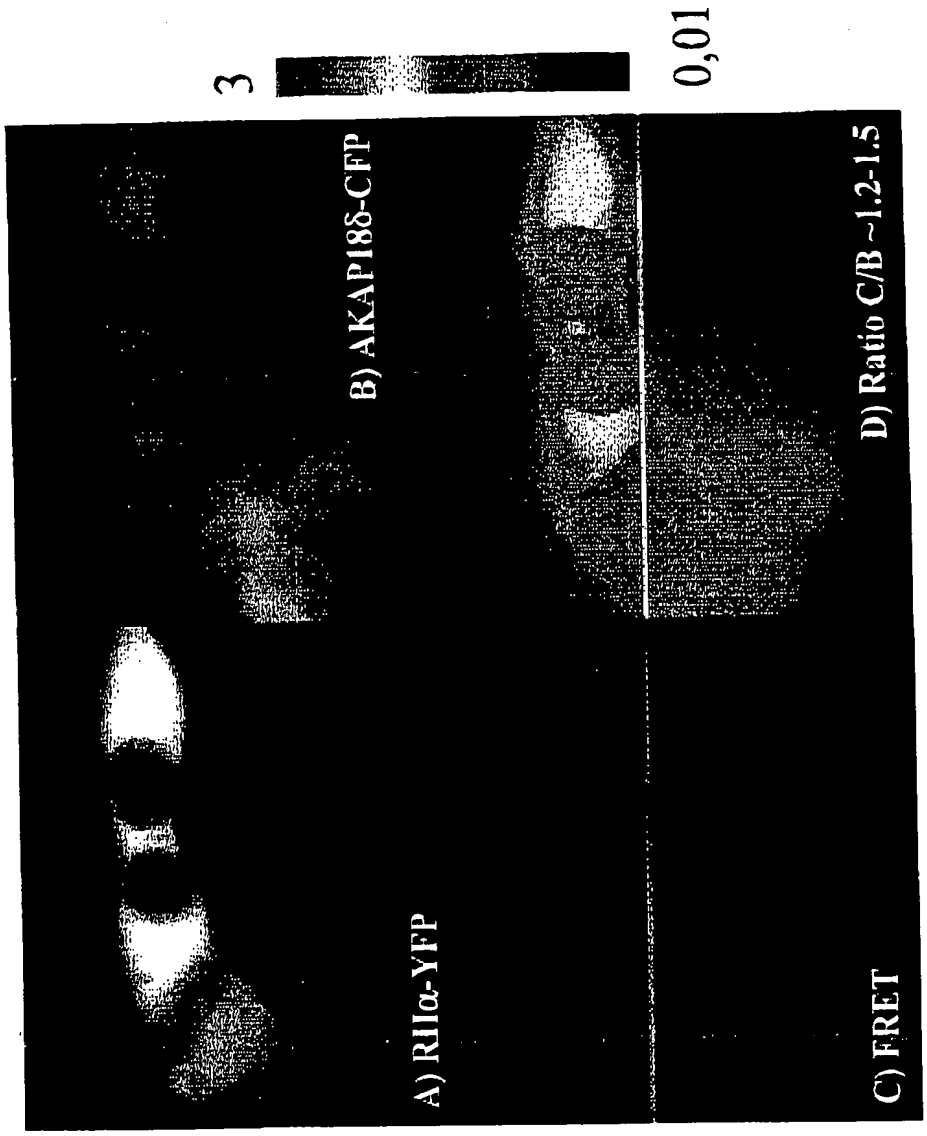
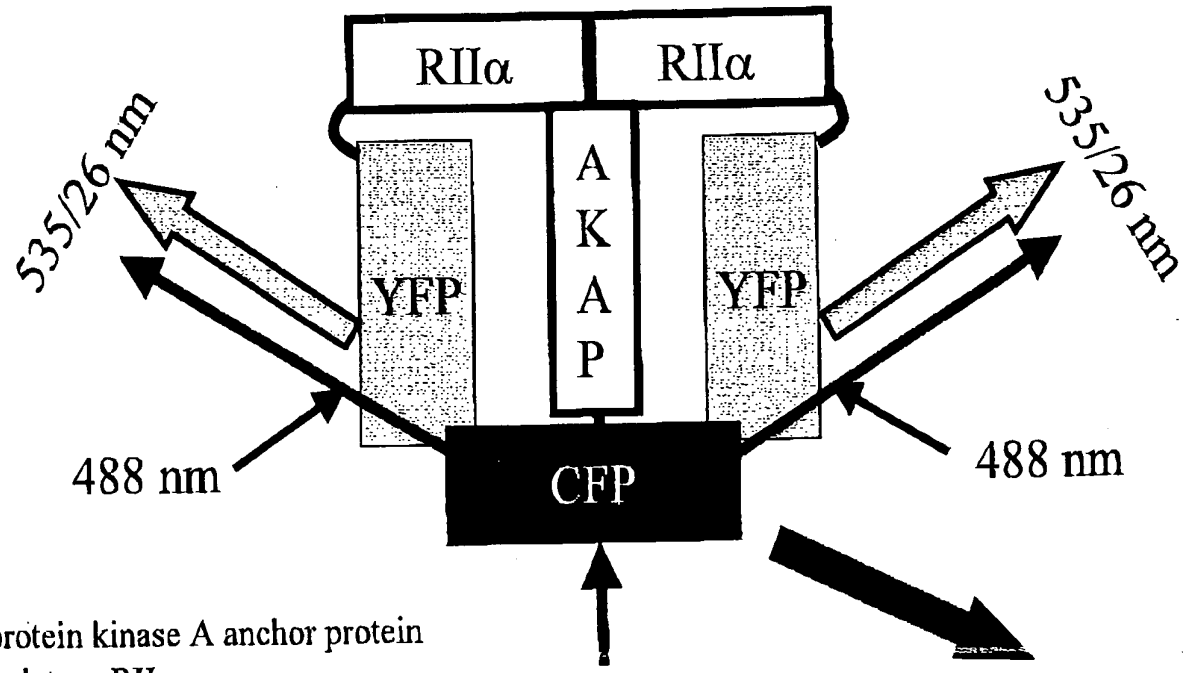


Fig. 3: *F*luorescent *R*esonance *E*nergy *T*ransfer (FRET) between AKAP18δ-CFP and RIIα-YFP



AKAP, protein kinase A anchor protein
RIIα, regulatory RIIα subunit of PKA
YFP, *yellow*-fluorescent protein
CFP, *cyan*-fluorescent protein

Fig. 4A

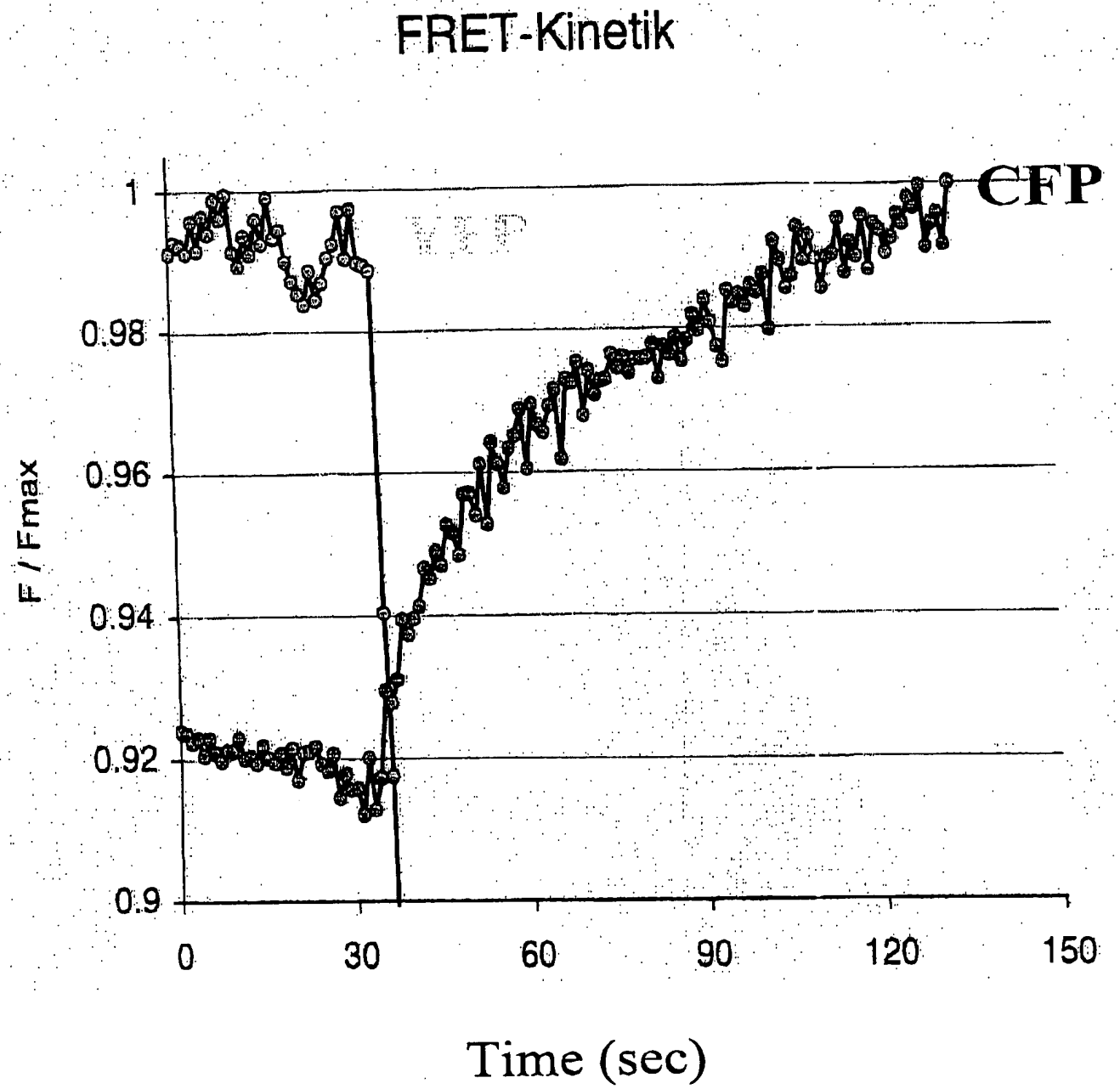

FRET-Kinetik
CFP
YFP
1
0.98
0.96
0.94
0.92
0.9
F / Fmax
0
30
60
90
120
150
Time (sec)

Fig. 4B

Bleaching of acceptor YFP (RIIα-YFP) results in an increase of fluorescence emitted by donor CFP (AKAP18δ-CFP)

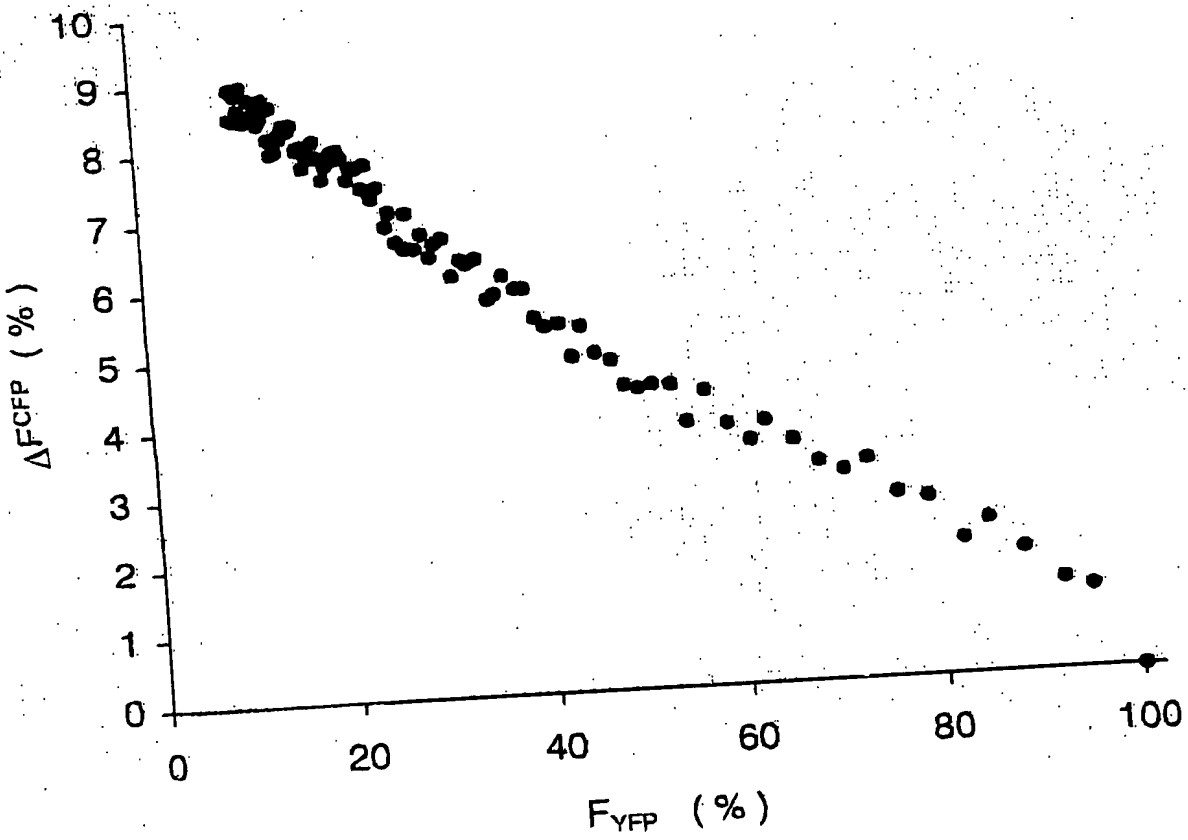
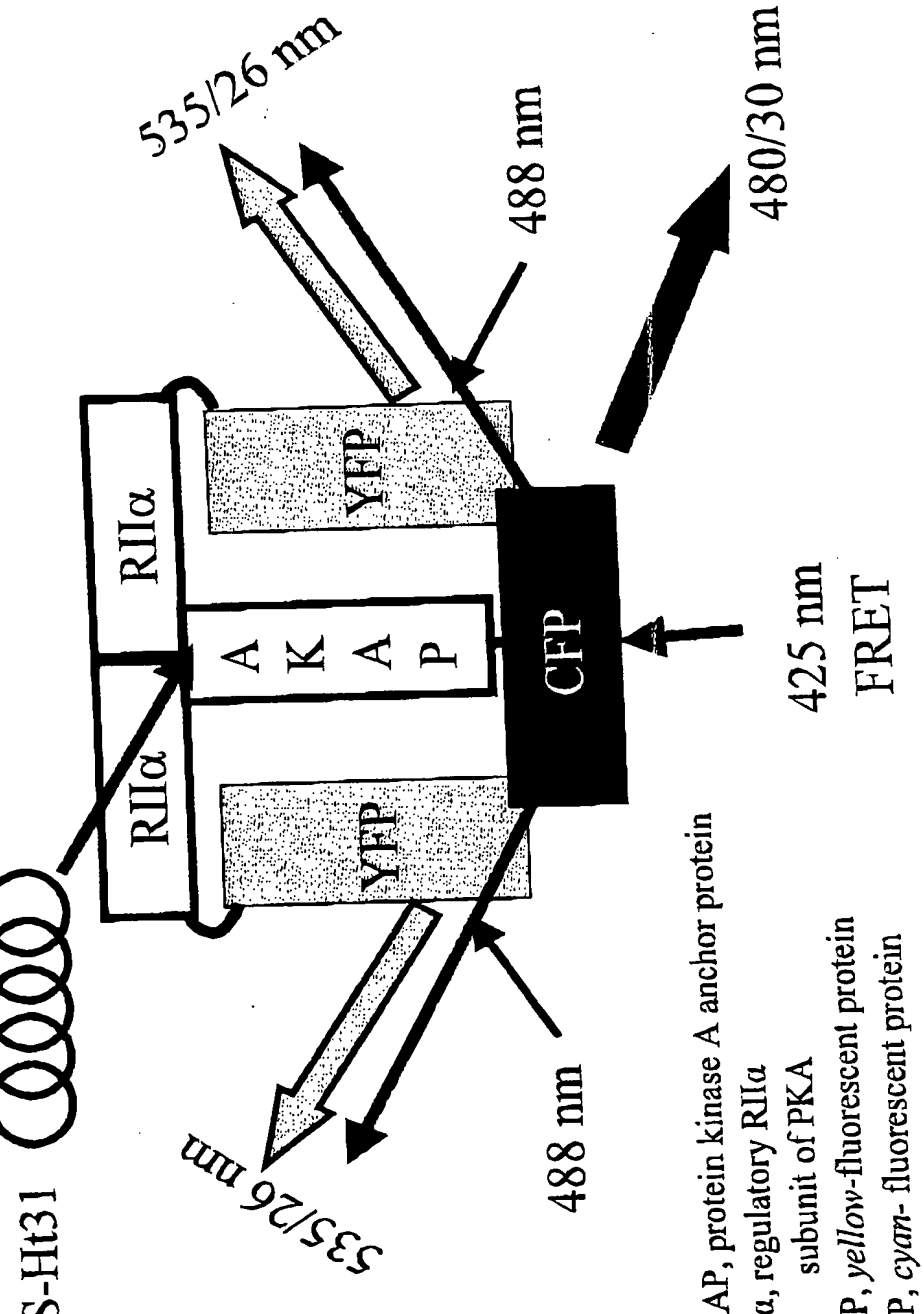
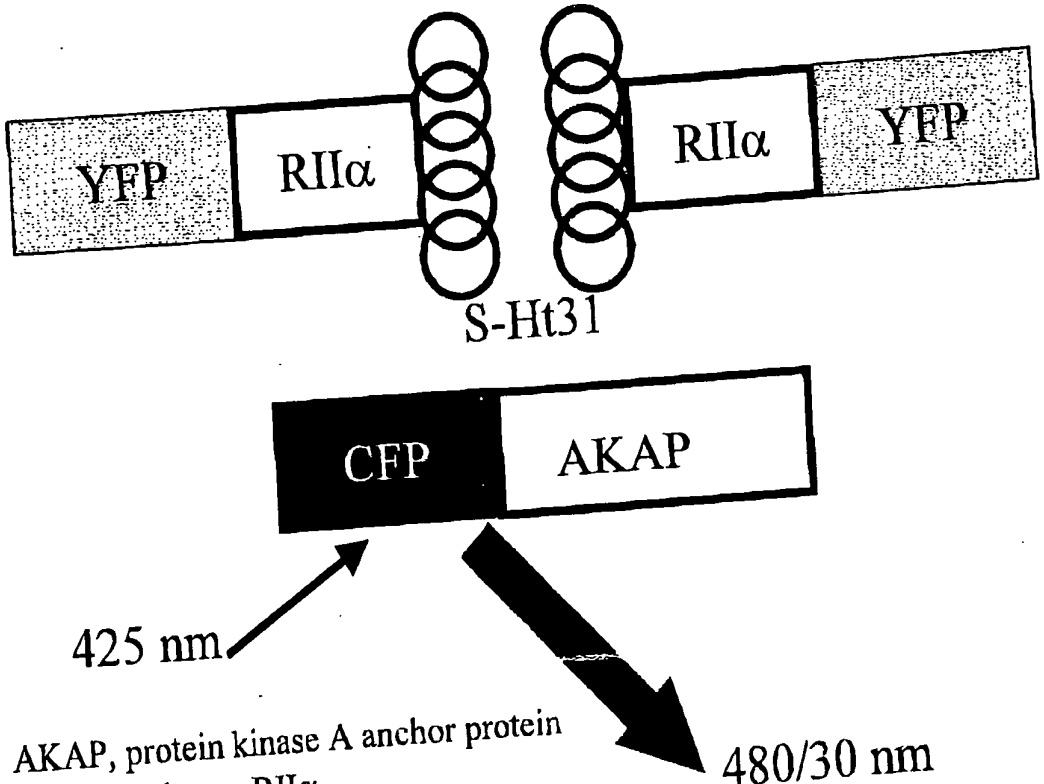


Fig. 5A: Inhibition of interaction of AKAP188-CFP and RIIα-YFP by peptide S-Ht31



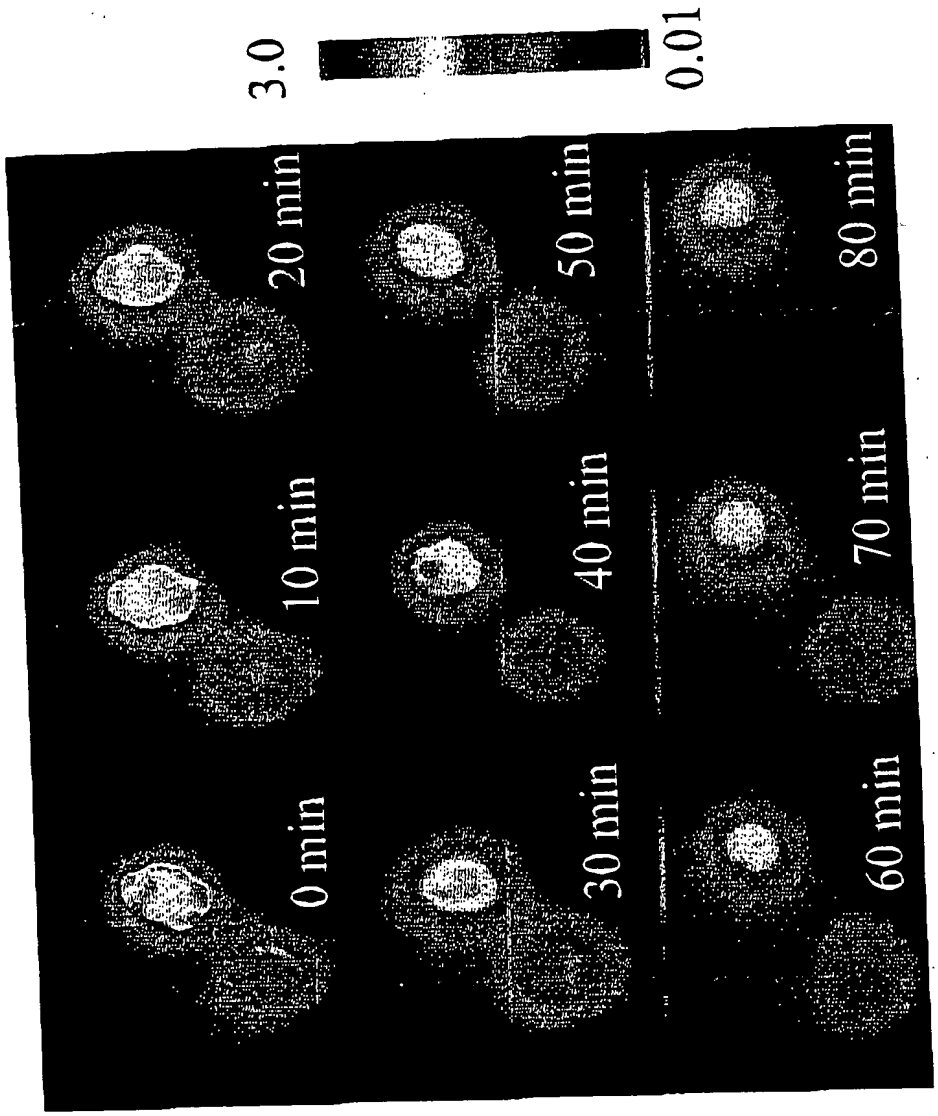
AKAP, protein kinase A anchor protein
RIIα, regulatory RIIα subunit of PKA
YFP, *yellow*-fluorescent protein
CFP, *cyan*- fluorescent protein

Fig. 5B: Result of inhibition of interaction between AKAP18δ-CFP and RIIα-YFP by S-Ht31



AKAP, protein kinase A anchor protein
RIIα, regulatory RIIα
subunit of PKA
YFP, *yellow*-fluorescent protein
CFP, *cyan*- fluorescent protein

Fig. 6A: Inhibition of interaction of AKAP18δ-CFP and RIIα-YFP by peptide S-Ht31 – decrease of FRET signal



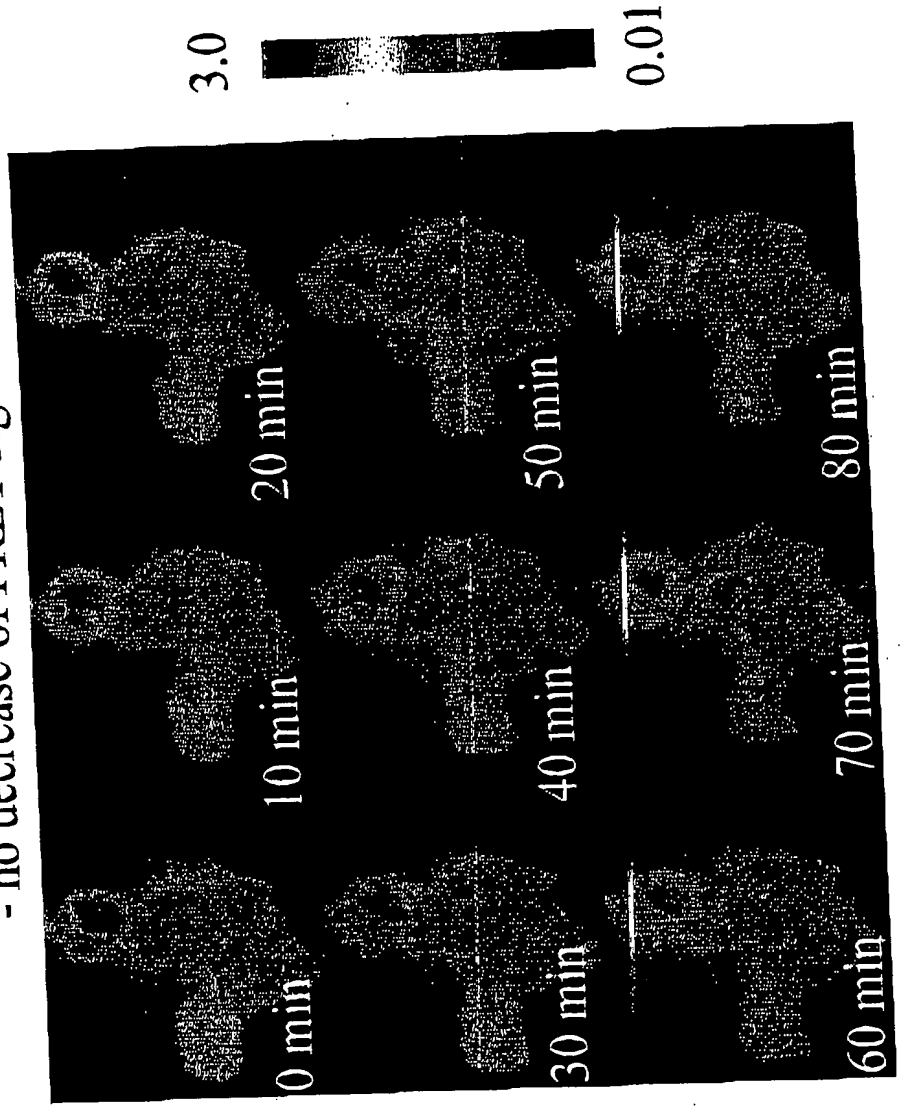


Fig. 6B: Peptide S-Ht31-P fails to inhibit interaction of AKAP18δ-CFP and RIIα-YFP
- no decrease of FRET signal

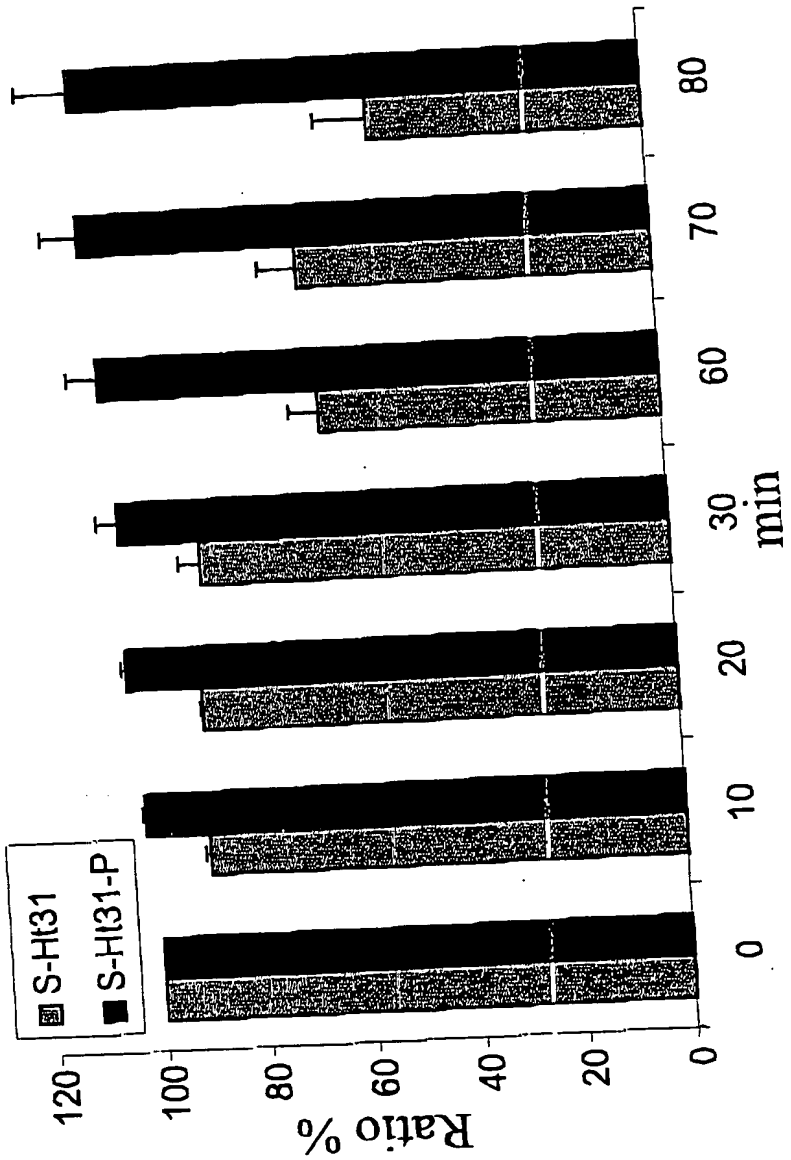


Fig. 6C: Changes in FRET signals (ratio 535/480) of AKAP18δ-CFP and RIIα-YFP in HEK293 cells in the presence of peptides S-Ht31 and S-Ht31-P

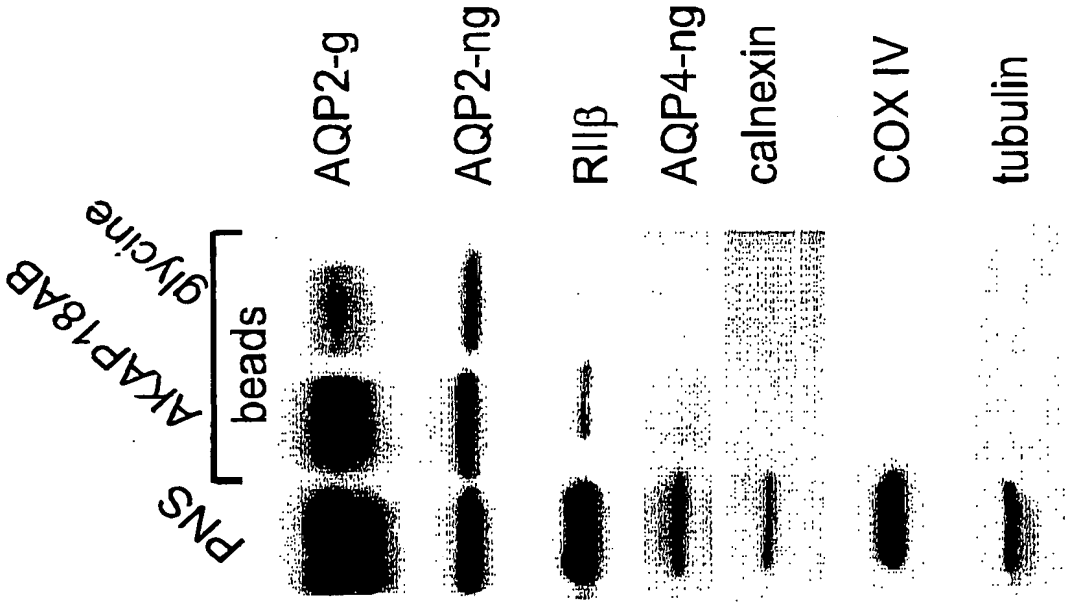
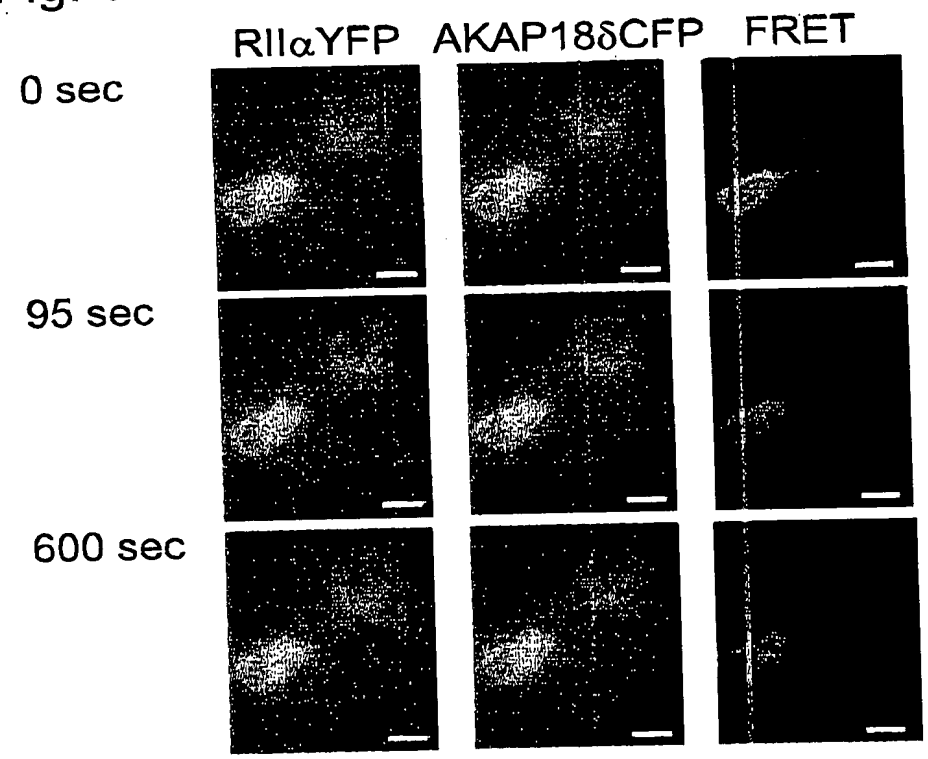
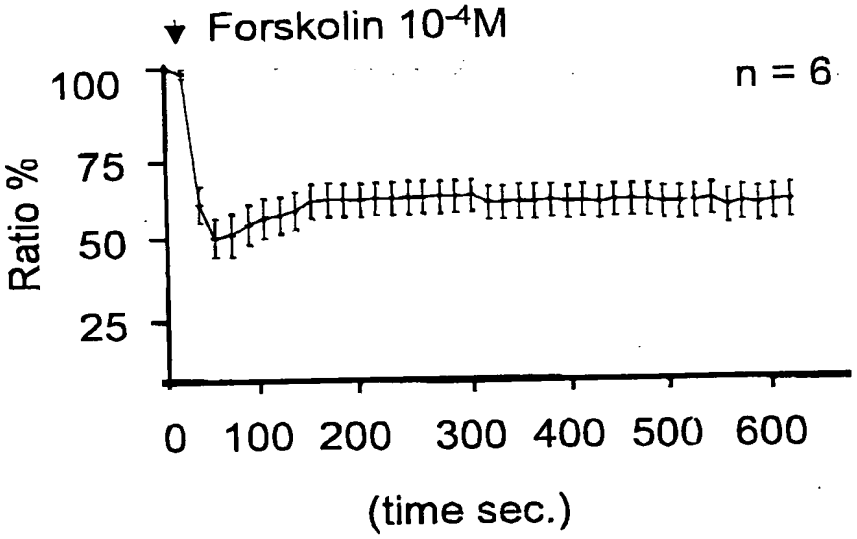

AQP2-g
AQP2-ng
RIIβ
AQP4-ng
calnexin
COX IV
tubulin
PNS
AKAP18AB
glycine
beads

Fig. 7

Fig. 8A


RIIαYFP
AKAP18δCFP
FRET
0 sec
95 sec
600 sec

B


Forskolin 10-4M
n = 6
100
75
50
25
Ratio %
0
100
200
300
400
500
600
(time sec.)

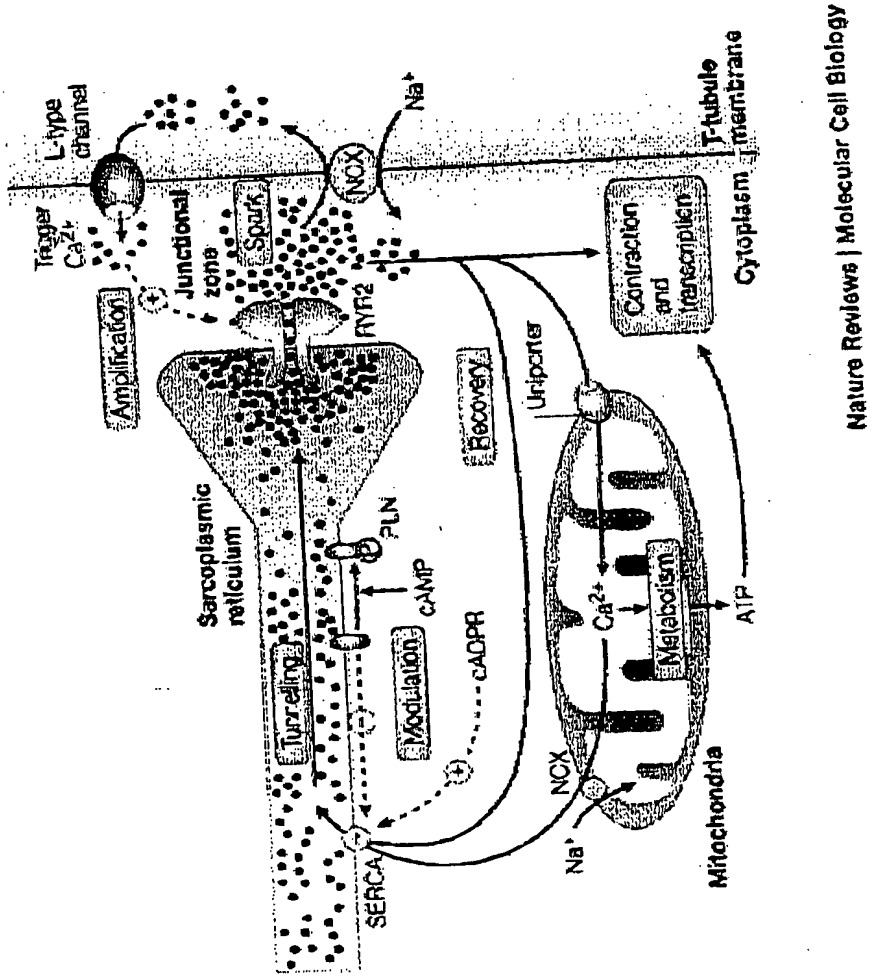

L-type channel
Trigger Ca^{2+}
Junctional zone
Spark
NCX
Na^+
T-tubule membrane
Amplification
RYR2
Contraction and transcription
Cytoplasm
Recovery
Uniporter
Sarcoplasmic reticulum
PLN
cAMP
Tuneling
Modulation
cADPR
Ca^{2+}
Metabolism
ATP
NCX
Na^+
SERCA
Mitochondria
Nature Reviews | Molecular Cell Biology

Fig. 9

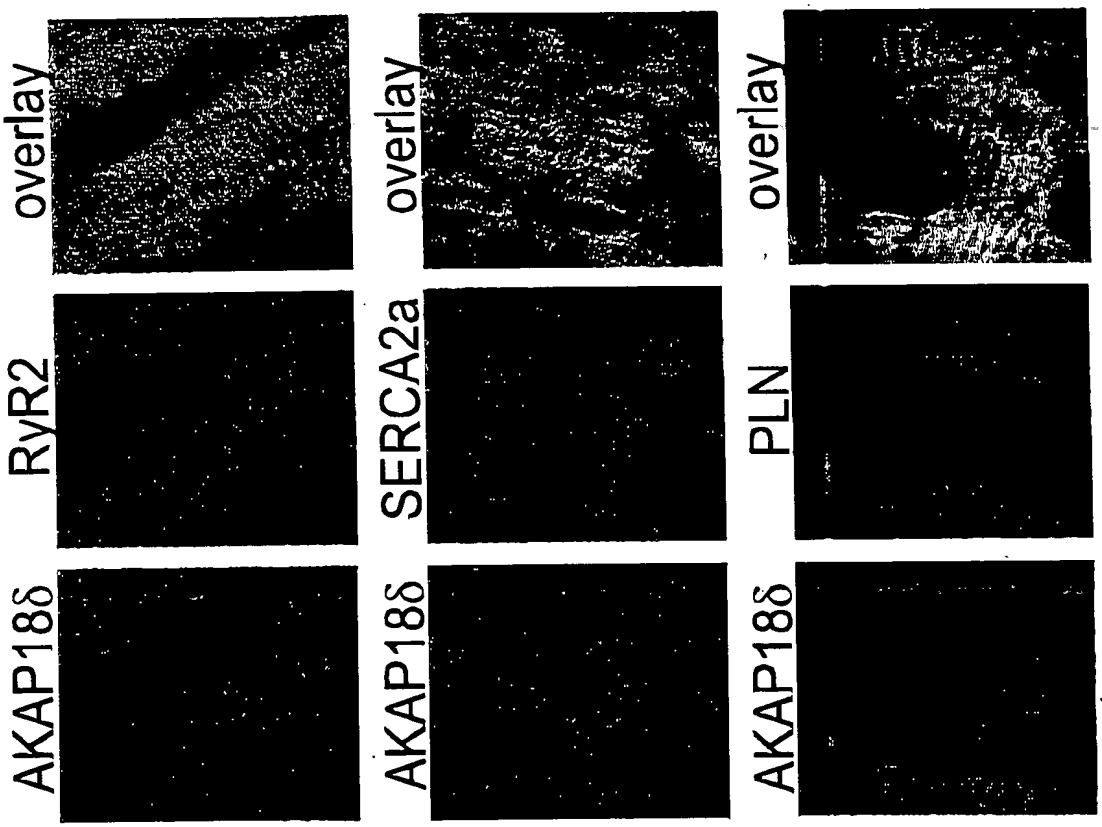
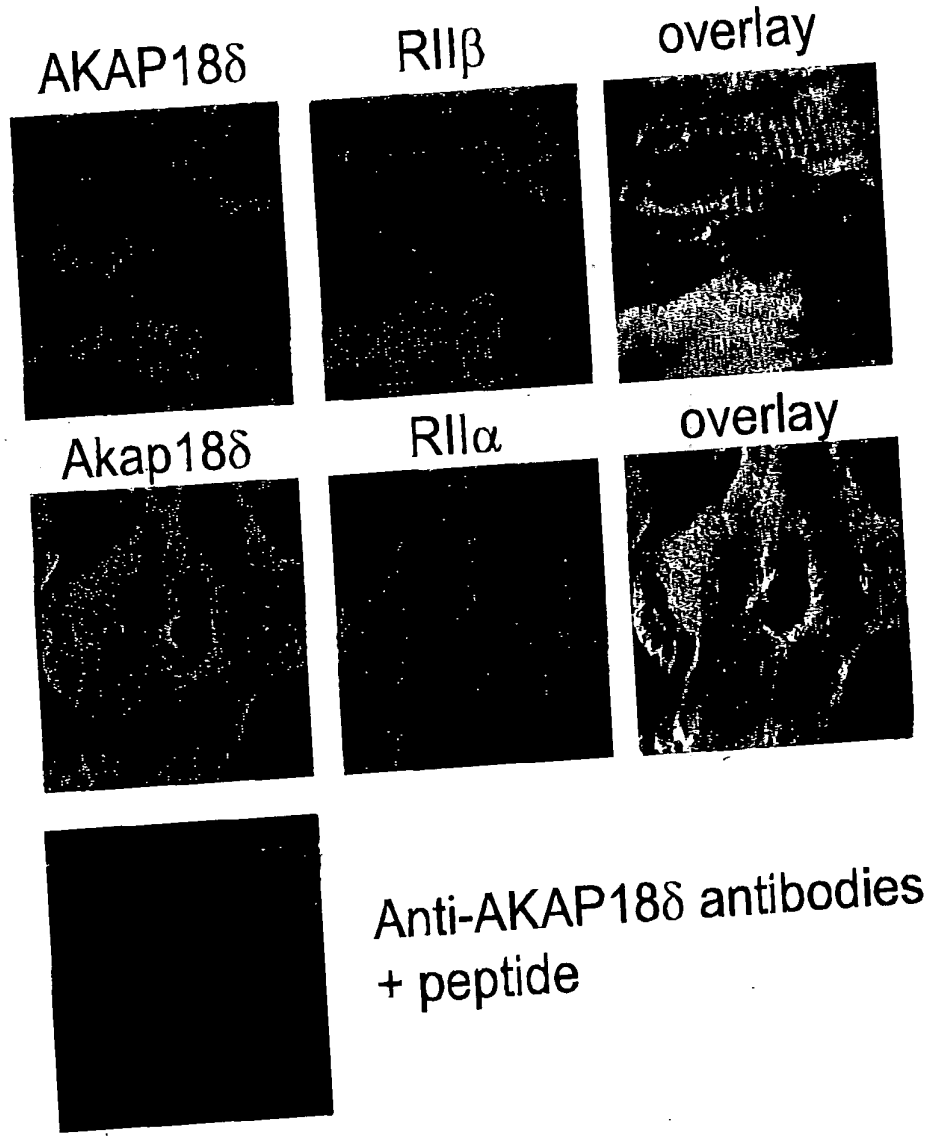

overlay
RyR2
AKAP18δ
overlay
SERCA2a
AKAP18δ
overlay
PLN
AKAP18δ
A
B
C

Fig. 10

Fig. 10



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